

ABSTRACT OF THE DISCLOSURE

1        In a ring topology network, a number of nodes interconnect  
2 transmission links to form first and second working rings and first and  
3 second optical protection rings in a ring topology. Multiple working paths  
4 are established on each working ring and multiple protection paths are  
5 established on each protection ring corresponding to the working paths. A  
6 first working path spans across first and second nodes for transmission of a  
7 signal in a first direction of the ring topology, and a second working path of  
8 the second working ring spans across the first and second nodes for  
9 transmission of a signal in a second direction of the ring topology opposite  
10 to the first direction. A first protection path on the first protection ring  
11 spans across the first and second nodes for transmission of a signal in the  
12 second direction of the ring topology, and a second protection path of the  
13 second protection ring spans across the first and second nodes for  
14 transmission of a signal in the first direction of the ring topology. The first  
15 and second nodes normally use the first and second working paths,  
16 respectively. Responsive to a failure of one of the first and second working  
17 paths, the first and second nodes use a corresponding one of the first and  
18 second protection paths, instead of the failed working path.